AMENDMENTS TO THE CLAIMS

The following listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A non-parallax optical auto-focusing system comprising:

a moveable lens;

an actuator coupled to the lens for moving the moveable lens along an optical axis;

a first beam splitter ~~positioned in an~~ positioned in the optical axis on a first side of ~~a moveable~~ the moveable lens for directing at least a portion of an aiming beam along the optical axis and toward an externally located optical target for generating a reflected aiming beam;

a second beam splitter positioned in the optical axis on a second side of the moveable lens for redirecting at least a portion of the reflected aiming beam at an angle perpendicular to the optical ~~axis; and~~ axis, wherein the first and second sides in the optical axis are substantially opposite with respect to each other;

a sensor assembly having a photodetector adapted to receive the redirected reflected aiming beam, and determine a parameter ~~thereof~~ of the redirected reflected aiming beam, and ~~generate~~ having means for generating an output signal ~~to be used for focusing an image of the optical target onto an image sensor.~~ based on the determined parameter; and

an image sensor wherein said output signal is used for focusing an image of the optical target onto the image sensor.

Claim 2. (Original) The non-parallax optical auto-focusing system of claim 1, further comprising an optical code reader having a form factor and associated circuitry for decoding the optical target imaged on the image sensor, said optical code reader configured and adapted to receive the non-parallax optical auto-focusing system within said form factor.

Claim 3. (Currently Amended) The non-parallax optical auto-focusing system of claim 1, further comprising an aiming beam assembly for generating the aiming beam, said aiming beam assembly having means for directing the aiming beam towards the ~~second~~ first beam splitter and perpendicular to the optical axis.

Claim 4. (Original) The non-parallax optical auto-focusing system of claim 3, wherein said means for directing includes a disk having an aperture for transmitting the aiming beam therethrough and towards the first beam splitter.

Claim 5. (Original) The non-parallax optical auto-focusing system of claim 1, further comprising a signal processor adapted to receive the output signal and capable of generating a control signal based on information relayed by the output signal, said signal processor further adapted to execute a set of programmable instructions for updating the position of the moveable lens between the first and second beam splitters with respect to a reference position.

Claim 6. (Original) The non-parallax optical auto-focusing system of claim 5, further comprising a controller adapted to receive the control signal and generate an actuation signal for actuating an actuator operatively coupled to the lens for moving the moveable lens along the optical axis, wherein movement of the moveable lens along the optical axis adjusts the focus of the image of the optical target onto the image sensor.

Claim 7. (Original) The non-parallax optical auto-focusing system of claim 6, wherein the control signal relays to the controller one of an amount of time the actuator is to be actuated and an amount the lens is to be moved along the optical axis.

Claim 8. (Original) The non-parallax optical auto-focusing system of claim 5, further comprising at least one look-up table accessible by the signal processor for correlating the parameter with a distance to the optical target for determining a distance to the optical target.

Claim 9. (Original) The non-parallax optical auto-focusing system of claim 6, wherein said signal processor and said controller are located within a host optical code reading terminal in operative communication with said actuator.

Claim 10. (Original) The non-parallax optical auto-focusing system of claim 1, further comprising means for determining whether to generate the output signal based on a value of the determined parameter.

Claim 11. (Currently Amended) An optical code reading system comprising:

an optical code reader having an image sensor and associated circuitry; and

a non-parallax optical auto-focusing system comprising:

a lens operatively coupled to an actuator and capable of being moved by said actuator along an optical axis of the optical code reader;

an aiming beam assembly capable of producing an aiming beam;

a first beam splitter positioned in the optical axis of said optical code reader on a first side of the lens for directing at least a portion of said aiming beam along the optical axis and toward an externally located optical target for generating a reflected aiming beam;

a second beam splitter positioned in the optical axis of said optical code reader on a second side of the lens for redirecting at least a portion of the reflected aiming beam at an angle perpendicular to the optical axis wherein the first and second sides of the lens are substantially opposite with respect to each other; and

a feedback system adapted to receive the redirected reflected aiming beam, determine a parameter thereof, and generate at least one signal for repositioning the lens according to the determined parameter of the redirected reflected aiming beam.

Claim 12. (Original) The optical code reading system of claim 11, wherein the feedback system comprises:

a sensor assembly adapted to receive the redirected reflected aiming beam and generate an output signal indicative of a value determined using the determined parameter of the redirected reflected aiming beam;

a signal processor adapted to receive the output signal and capable of generating a control signal based on information relayed by the output signal; and

a controller adapted to receive the control signal, and generate an actuation signal for actuating the actuator operatively coupled to the lens for moving the lens along the optical axis of the optical code reader.

Claim 13. (Original) The optical code reading system of claim 11, wherein the aiming beam assembly includes means for directing the aiming beam towards the second beam splitter and perpendicular to the optical axis.

Claim 14. (Original) The optical code reading system of claim 13, wherein said means for directing includes at least one diffractive optical element.

Claim 15. (Original) The optical code reading system of claim 14, wherein the at least one diffractive optical element conditions the aiming beam to project a particular geometrical shape or design.

Claim 16. (Original) The optical code reading system of claim 12, wherein the sensor assembly includes an optical assembly having at least one mask for inhibiting transmission of at least a portion of the redirected reflected aiming beam.

Claim 17. (Original) The optical code reading system of claim 11, further comprising means for determining whether to generate the at least one signal based on a value of the determined parameter.

Claim 18. (Currently Amended) A signal generated by a non-parallax optical auto-focusing system, said signal relaying information based on at least one parameter of a redirected reflected aiming beam generated by said non-parallax optical auto-focusing system, wherein said information is used for repositioning a lens of said system to adjust a focus of an image of an externally located optical target onto an image sensor, said system comprising:

a first beam splitter positioned in an optical axis on a first side of said lens for directing at least a portion of an aiming beam along the optical axis and toward the externally located optical target for generating a reflected aiming beam;

a second beam splitter positioned in the optical axis on a second side of said lens for redirecting at least a portion of the reflected aiming beam at an angle perpendicular to the optical axis to form said redirected reflected aiming beam, wherein the first and second sides of said lens are substantially opposite with respect to each other; and

an actuator for repositioning the lens according to the information relayed by said signal.

Claim 19. (Original) The signal of claim 18, wherein said at least one parameter is a light intensity of the redirected reflected aiming beam and said information includes an amount of time the actuator is to be actuated for repositioning the lens.

Claim 20. (Original) A method for focusing an image onto an image sensor positioned along an optical axis of an optical code reading system, said method comprising the steps of:

producing an aiming beam;

directing at least a portion of said aiming beam substantially along the optical axis of the optical code reading system and toward an optical target using a first beam splitter;

processing at least a portion of a beam reflected by said optical target and redirected away from said optical axis by a second beam splitter to determine at least one parameter of said redirected reflected beam;

generating at least one signal based on a value of the at least one parameter; and

actuating an actuator using a signal of said at least one signal for moving a lens operatively coupled to the actuator and positioned between the first and second beam splitters along the optical axis, wherein the movement of said lens adjusts a focus of the image of the optical target onto the image sensor.

Claim 21. (Original) The method of claim 20, further comprising the step of determining a distance to the optical target by accessing a look-up table correlating the at least one parameter with a distance to the optical target.

Claim 22. (Currently Amended) A method for determining a distance to an optical target using an optical code reading system having an image sensor positioned along an optical axis of the system, said method comprising the steps of:

producing an aiming beam;

directing at least a portion of said aiming beam substantially along the optical axis of the optical code reading system and toward an optical target using a first beam splitter;

processing at least a portion of a beam reflected by said optical target and redirected away from said optical axis by a second beam splitter to determine at least one parameter of said redirected reflected beam; and

accessing a look-up table correlating the at least one parameter with the distance to the optical ~~target.~~ target;

generating at least one signal based on a value of the at least one parameter; and

actuating an actuator using a signal of said at least one signal for moving a lens operatively coupled to the actuator and positioned between the first and second beam splitters along the optical axis, wherein the movement of said lens adjusts a focus of an image of the optical target onto the image sensor.

Claim 23. (Cancelled)